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B: Amendments to The Claims:

What is claimed is:

1 1. (Currently Amended) A computer program on a media  
2 usable with a computer for testing combinational and  
3 sequential logic circuits where memory units are coupled  
4 together to form shift register latches that are arranged in  
5 a shift register scan path with an input and output for  
6 testing the logic circuits, said computer program  
7 comprising:

8 load pattern computer code for shifting data through  
9 the scan path to load the shift register latches with a  
10 first data pattern representative of a stuck-at fault  
11 condition and thus introducing said data into an  
12 inaccessible latch in a stuck-at fault LSSD chain;

13 pattern variation computer code for causing permutation  
14 of at least one of the following operating parameters: a  
15 supply voltage, a reference voltage, a timing pattern  
16 temperature and a timing sequence to trigger a change in  
17 state of at least one of the memory units in the shift  
18 register scan path for the purpose of locating stuck-at  
19 fault bits in said LSSD chain; and

20 analyzing computer code for determining the memory unit  
21 furthest from the shift register scan path output that has  
22 changed state from its loaded value for the purpose of  
23 locating stuck-at fault bits in said at least one of the  
24 memory units.

1 2. (original) The computer program of claim 1, wherein said  
2 pattern variation computer code is for causing permutations  
3 in a plurality of the operating parameters.

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2 3. (original) The computer program of claim 2, wherein said  
3 analyzing computer code includes shifting code for shifting  
4 data out of the scan path after each of the operating  
parameters is separately permuted.

1  
2 4. (Previously Amended) The computer program of claim 3,  
3 wherein said analyzing computer code includes selection  
4 computer code for selecting the last bit read out that has  
5 changed from its load pattern as being from the shift  
register latch closest to the stuck-at fault condition.

1  
2 5. (currently amended) A method for testing combinational  
3 and sequential logic circuits where memory units are coupled  
4 together to form shift register latches, arranged in a shift  
5 register scan path with an input and output for testing the  
6 logic circuits, the method comprising:

7 determining a stuck-at fault condition exists in one of  
8 the shift register latches;

9 shifting data through the scan path to load the shift  
10 register latches with a first data pattern representative of  
11 the outputs state as a result of the stuck-at fault  
12 condition and thus introducing said data into an  
13 inaccessible latch in a stuck-at fault LSSD chain;

14 causing permutation of at least one of the following  
15 operating parameters: a supply voltage; a reference  
16 voltage; a timing pattern temperature and a timing sequence  
17 to trigger a change in state from the stuck-at fault state  
18 of at least one of the memory units in the shift register  
19 scan path for the purpose of locating stuck-at fault bits in  
20 said stuck-at fault LSSD chain; and

21 determining the memory unit furthest from the shift  
22 register scan path output that has changed state from its

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loaded value for the purpose of locating stuck-at fault bits  
in said at least one of the memory units.

6. (Previously Amended) The method of claim 5 including:  
causing permutations in a plurality of the operating  
parameters in determining said memory unit furthest from the  
shift register scan path output.

7. (original) The method of claim 6 including:  
shifting data out of the scan path after each of the  
operating parameters is separately permuted.

8. (Currently Amended) The memory of claim 7 including:  
selecting the last bit read out that has changed from  
its load pattern as being from the shift register latch  
closest to the stuck-at fault state ~~memory~~ condition.

9. (Previously submitted) The method of claim 5 including  
loading all shift register latches of the scan chain with  
stuck fault output state.

10. (Currently Amended) A computer program on a media usable  
with a computer for testing combinational and sequential  
logic circuits where memory units are coupled together to  
form shift register latches that are arranged in a shift  
register scan path with an input and output for testing the  
logic circuits, said computer program comprising:

stuck fault detection code for detecting a stuck-at  
fault output level of the shift register scan path from an  
expect state;

load pattern computer code for shifting data through  
the scan path to load the shift register latches of the scan  
path with the detected stuck-at fault output level condition

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15 and thus introducing said data into an inaccessible latch in  
16 a stuck-at fault LSSD chain;

17 pattern variation computer code for causing permutation  
18 of at least one of the following operating parameters: a  
19 supply voltage, a reference voltage, a timing pattern  
20 temperature and a timing sequence to trigger a change in  
21 state of at least one of the memory units in the shift  
22 register scan path that is detectable at the output of the  
23 shift register scan path for the purpose of locating  
24 stuck-at fault bits in said stuck-at fault LSSD chain; and  
25 analyzing computer code for determining the memory unit  
26 furthest from the shift register scan path output that has  
27 changed state from its loaded value as a result of  
28 permutations of an operating parameter for the purpose of  
locating stuck-at fault bits in said at least one of the  
1 memory units.

2  
3 11. (Previously submitted) A computer program of claim 10  
including masking code for masking out all expects for  
1 latches following and including a farthest failing latch.

2  
3 12. (Previously submitted) The computer program of claim  
4 11, wherein said pattern variation computer code is for  
5 causing permutations in a plurality of the operating  
6 parameters centered around a working threshold varying the  
operating parameters in the vicinity of the working  
1 threshold.

2  
3 13. (Previously submitted) The computer program of claim 12,  
4 wherein said analyzing computer code includes shifting code  
for shifting data out of the scan path after each of the  
1 operating parameters is separately permuted.

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3 14. (Currently Amended) The computer program of claim 11,  
4 wherein said analyzing computer code includes selection  
5 computer code for selecting the last bit read out that has  
6 changed from its load pattern as being from the shift  
register latch closest to the a stuck-at fault memory unit  
having a stuck-at fault.